

TABLE 1
GROUNDWATER SAMPLING RESULTS
MAY 2006
WASATCH CHEMICAL SITE, SALT LAKE CITY, UTAH
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		Performance Monitoring Wells											Contingency Monitoring Wells			Natural Attenuation Assessment	
Sample Identification	Date Collected	ES-01 5/16/06	EX-02 5/16/06	EX-04 5/16/06	EX-05 5/16/06	EX-07 5/16/06	EX-08 5/16/06	EX-09 5/16/06	EX-11 5/16/06	MW-06 5/15/06	MW-20 5/16/06	MW-23 5/15/06	MW-24A 5/15/06	MW-25 5/15/06	PZ-3 ^(b) 5/15/06	Biodegradation Indicator	Purpose and/or Interpretation
Volatile Organic Compounds (µg/l)																	
Analytical Method																	
Tetrachloroethene (PCE)	SW8260B	3.6	5.7	< 1	< 1	11	0.2 T	< 1	3.2	< 1	0.5 T	< 1	< 1	< 1	< 1	NA	Original indicator compound; MCL is 5 µg/l
Trichloroethene (TCE)	SW8260B	24	200 D	81 D	6	22	0.5 T	0.4 T	210 DJ	< 1	6.5	< 1	< 1	< 1	< 1	detection	Original indicator compound; degradation product of PCE; MCL is 5 µg/l
1,1-Dichloroethene	SW8260B	5.7	14	9.8	12	0.5 T	< 1	0.3 T	20	< 1	1	< 1	< 1	< 1	< 1	detection	Degradation product of trichloroethene; MCL is 7 µg/l
Vinyl chloride	SW8260B	60 D	65 D	0.3 T	0.7 T	2.1	< 1	< 1	380 DJ	< 1	5.4	< 1	< 1	< 1	< 1	detection	Degradation product of dichloroethene; MCL is 2 µg/l
Pesticides (µg/l)																	
Pentachlorophenol (PCP)	SW8151A	8 D	2.4 D	0.3 T	< 0.5	1.2	0.7	< 0.5	< 0.5	NS	< 0.5	NS	NS	NS	NS	NA	Original indicator compound; MCL is 1 µg/l
Geochemical parameters																	
pH (standard units)	field measurement	7.5	6.1	6.8	6.8	7.3	6.6	7.0	6.8	6.7	6.9	6.2	6.7	6.8	6.5	5 to 9 ^(a)	Optimal range for reductive pathway
Oxidation-reduction Potential (mV)	field measurement	68	299	225	118	170	313	286	9	131	-18	104	131	134	104	<50 ^(a)	Reductive pathway possible
Dissolved Oxygen (mg/l)	field measurement	0.0	0.8	0.3	0.0	2.3	0.1	1.0	0.0	0.3	0.1	0.3	0.1	0.1	0.5	<0.5 ^(a)	Reductive pathway possible
Nitrate (mg/l)	E300.0	0.0648 T	<0.1	<0.1	<0.1	2.54	<0.1	0.171	<0.1	0.252	1.04	<1 D	<0.1	<0.1	<0.1	<1 ^(a)	Reductive pathway possible
Nitrite (mg/l)	E300.0	< 0.5 D	< 0.5 D	< 0.5 D	< 0.5 D	< 0.1	< 1 D	< 0.1	< 0.5 D	< 0.1	< 0.5 D	< 1 D	< 0.1	< 0.5 D	< 0.1	> 1	
Iron II (mg/l)	Hach 8146	0.75	3.3	3.3	3.3	2.9	0.4	0.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	>1 ^(a)	Reductive pathway possible
Sulfate (mg/l)	E300.0	217 D	1750 D	1920 D	2090 D	167 D	1120 D	1270 D	1330 D	993 D	1480 D	1230 D	145 D	709 D	2030 D	<20 ^(a)	At higher concentrations may compete with reductive pathway
Sulfide, total (mg/l)	E376.2	2.28	< 0.2	< 0.2	< 0.2	1.09	< 0.2	< 0.2	0.176 T	< 0.2	0.776	< 0.2	< 0.2	< 0.2	< 0.2	>1 ^(a)	Reductive pathway possible

^(a) From Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater, USEPA, 1998

^(b) Contingency well MW-26A was destroyed during construction activities on the SteelCo property in October 2004. Consequently, data for piezometer PZ-3 is reported in place of data for MW-26A. PZ-3 is located approximately 100 feet south of the former MW-26A.

MCL maximum contaminant level (regulatory limit)

mg/l milligrams per liter

mV millivolts

µg/l micrograms per liter

Bold Values in bold suggest biodegradation is possible at the site

NA Not applicable

NS Not sampled

D Sample dilution required for analysis; reported values reflect the dilution

J Data are estimated due to associated quality control data

T Analyte was positively identified but the reported concentration is estimated; reported concentration is less than the reporting limit, but greater than the method detection limit.

TABLE B1-1

EVALUATION OF CONTAMINANT CONCENTRATION TRENDS FOR THE EIGHT MOST RECENT DATA POINTS
WASATCH CHEMICAL SITE
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Well ID	Chemical Constituent	Current Trend ^(b)	May 2006 Concentration Relative to MCL	Reduced by more than 50% of Initial Baseline?	Comments
ES-01 ^(a)	PCE	NA (below MCL)	below	yes	PCE concentrations have decreased from 2200 µg/l to below the MCL since 1997. PCE concentrations prior to the May 2006 round are all above the MCL.
	TCE	asymptotic	above	yes	TCE concentrations have decreased from 890 to 24 µg/l since 1997. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	1,1-DCE	NA	below	yes	1,1-DCE concentrations decreased from 270 µg/l in 1997 5.7 µg/l, which is below the MCL of 7 µg/l.
	PCP	asymptotic	above	yes	PCP concentrations have decreased substantially, from 4700 to 8 µg/l since 1997.
	VC ^(c)	NA	above	NA	Data have fluctuated between 6.1 and 550 µg/l since 2003 when VC monitoring began.
EX-02 ^(a)	PCE	increasing	above	yes	May 2006 concentration of 5.7 µg/l is just barely over the MCL. Concentrations were detected below the MCL for the previous 10 consecutive sampling rounds, from May 2002 through 2005.
	TCE	asymptotic	above	yes	Data since 2003 range between 127 to 390 µg/l. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	1,1-DCE	asymptotic	above	yes	A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	PCP	asymptotic	above	yes	PCP concentrations have been 2.4 µg/l or less since November 2001. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	VC ^(c)	NA	above	NA	VC concentrations have ranged between 48 and 201 µg/l since 2003 when VC monitoring began.
EX-04	PCE	NA (below MCL)	below	NA	Although PCE was sporadically detected in 1995 through 2000, PCE concentrations have remained below reporting limits since May 2001.
	TCE	asymptotic	above	yes	Overall, TCE concentrations have decreased from 680 to 81 µg/l since 1995. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	1,1-DCE	asymptotic	above	yes	1,1-DCE concentrations have stabilized between 8.2 and 15 µg/l over the past 8 sampling rounds. A regression analysis for these 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	PCP	NA (below MCL)	below	NA	PCP concentrations have been predominately below the reporting limits; however, PCP has been detected 5 times since 1996, all at concentrations below the MCL.
	VC ^(c)	NA	below	NA	VC has been detected only 3 times since monitoring began for VC in 2003, each at concentrations at or below the MCL.
EX-05	PCE	NA (below MCL)	below	yes	All PCE results since September 1995 are below reporting limits.
	TCE	asymptotic	above	yes	TCE concentrations have decreased from 140 to 6 µg/l since May 2004. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	1,1-DCE	asymptotic	above	yes	Data have ranged between 1 and 23 µg/l since 2003. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	PCP	NA (below MCL)	below	NA	PCP concentrations have been predominately below the reporting limits; however, sporadic detections occurred near reporting limits in 2000, 2001, 2002, and 2003.
	VC ^(c)	NA	below	NA	VC concentrations for 5 of the 9 sampling events are below the MCL.

TABLE B1-1

**EVALUATION OF CONTAMINANT CONCENTRATION TRENDS FOR THE EIGHT MOST RECENT DATA POINTS
WASATCH CHEMICAL SITE
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Well ID	Chemical Constituent	Current Trend ^(b)	May 2006 Concentration Relative to MCL	Reduced by more than 50% of Initial Baseline?	Comments
EX-07	PCE	asymptotic	above	yes	PCE concentrations ranged between 3.6 and 14 µg/l since 2003. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	TCE	asymptotic	above	yes	TCE concentrations ranged between 11 and 65 µg/l since 2003. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	1,1-DCE	NA (below MCL)	below	yes	1,1-DCE concentrations have remained below the MCL of 7 µg/l since November 2001.
	PCP	asymptotic	above	yes	PCP concentration for May 2006 is 1.2 µg/l, barely above the MCL of 1.0 µg/l. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	VC ^(c)	NA	above	NA	The May 2006 result is 2.1 µg/l, barely above the MCL of 2.0 µg/l.
EX-08	PCE	NA (below MCL)	below	NA	Although sporadic detections of PCE have historically occurred, concentrations have remained below the MCL since August 2003.
	TCE	NA (below MCL)	below	NA	TCE concentrations have remained below the MCL since November 2003.
	1,1-DCE	NA (below MCL)	below	NA	1,1-DCE concentrations have been below the MCL since August 1996.
	PCP	NA (below MCL)	below	yes	PCP concentrations have been remained below the MCL since August 2000.
	VC ^(c)	NA (below MCL)	below	NA	VC concentrations have been below the MCL since November 2003.
EX-09	PCE	NA (below MCL)	below	NA	PCE concentrations have historically been below reporting limits overall.
	TCE	NA (below MCL)	below	yes	TCE concentrations below the MCL for 11 of 12 most recent sampling rounds.
	1,1-DCE	NA (below MCL)	below	yes	1,1-DCE concentrations have remained below the MCL since 2001.
	PCP	NA (below MCL)	below	NA	PCP concentrations have historically been below reporting limit; although a trace concentration of 0.1 µg/l was detected in May 2004.
	VC ^(c)	NA (below MCL)	below	NA	VC has not been detected.
EX-11 ^(a)	PCE	NA (below MCL)	below	yes	PCE concentrations have been below the MCL over the past two monitoring rounds.
	TCE	asymptotic	above	yes	TCE concentrations ranged between 82 and 460 µg/l over the past 8 monitoring rounds. A regression analysis for these 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	1,1-DCE	asymptotic	above	yes	1,1-DCE concentrations ranged between 12 and 51 µg/l from March 1996 through May 2006. A regression analysis for the 8 most recent data points indicates the slope of the regression line is not statistically different from zero (no significant change in concentration), therefore an asymptote may have been reached.
	PCP	NA (below MCL)	below	yes	PCP concentrations have historically been below reporting limits, although trace concentrations were detected in May 2001 and May 2004.
	VC ^(c)	NA	above	NA	VC concentrations increased from 170 µg/l in February 2003 to a maximum of 658 µg/l in May 2004; since May 2004 concentrations have decreased to 380 µg/l.

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EVALUATION OF CONTAMINANT CONCENTRATION TRENDS FOR THE EIGHT MOST RECENT DATA POINTS
WASATCH CHEMICAL SITE
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Well ID	Chemical Constituent	Current Trend ^(b)	May 2006 Concentration Relative to MCL	Reduced by more than 50% of Initial Baseline?	Comments
MW-20 ^(a)	PCE	NA (below MCL)	below	yes	PCE concentrations have remained below the MCL of 5 µg/l since May 2002.
	TCE	decreasing	above	yes	TCE concentrations decreased from greater than 119 µg/l in May 2003 to 6.5 µg/l in May 2006. A regression analysis for the 8 most recent data points indicates the slope of the regression line is negative, suggesting a decreasing trend.
	1,1-DCE	NA (below MCL)	below	yes	1,1-DCE concentrations have remained below the MCL over the last two monitoring rounds.
	VC ^(c)	NA	above	NA	Trace concentrations were detected from February 2003 through May 2004. Concentrations of 4.7 to 7.6 µg/l have been detected since November 2004.
MW-23	PCE	NA	below	NA	Upgradient well; VOCs not detected historically.
	TCE	NA	below	NA	Upgradient well; VOCs not detected historically.
	1,1-DCE	NA	below	NA	Upgradient well; VOCs not detected historically.
	VC ^(c)	NA	below	NA	Upgradient well; VOCs not detected historically.
MW-24a	PCE	NA	below	NA	Downgradient well; VOCs not detected historically.
	TCE	NA	below	NA	Downgradient well; VOCs not detected historically.
	1,1-DCE	NA	below	NA	Downgradient well; VOCs not detected historically.
	VC ^(c)	NA	below	NA	Downgradient well; VOCs not detected historically.
MW-25	PCE	NA	below	NA	Downgradient well; VOCs not detected historically.
	TCE	NA	below	NA	Downgradient well; VOCs not detected historically.
	1,1-DCE	NA	below	NA	Downgradient well; VOCs not detected historically.
	VC ^(c)	NA	below	NA	Downgradient well; VOCs not detected historically.
PZ-3 ^(d)	PCE	NA	below	NA	Downgradient well; VOCs not detected historically.
	TCE	NA	below	NA	Downgradient well; VOCs not detected historically.
	1,1-DCE	NA	below	NA	Downgradient well; VOCs not detected historically.
	VC ^(c)	NA	below	NA	Downgradient well; VOCs not detected historically.

^(a) Biodegradation enhancing products were injected in the vicinity of this well following the May 2004 sampling event.

^(b) The eight most recent data points were used to assess current trends. For data points where a constituent was not detected, the reporting limit was used for regression analyses.

^(c) VC was added as an analyte in January 2003 to aid in monitoring of natural attenuation at the site, and is not included in the Record of Decision as an indicator chemical.

^(d) PZ-3 used as a replacement monitoring point since MW-26A was destroyed in October 2004.

MCL	maximum contaminant level	TCE	trichloroethene
NA	not applicable	VC	vinyl chloride
PCE	tetrachloroethene	VOC	volatile organic compound
PCP	pentachlorophenol	1,1-DCE	1,1-dichloroethene